IN THE CLAIMS

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- 1 1. (Original) A computer-implemented method for monitoring variations in the 2 film build thickness of workpieces on which a film build process has been performed, 3 comprising the steps of:
- measuring the film build thickness of a group of workpieces, the group comprising at least two subgroups of workpieces, each subgroup including at 6 least two workpieces;
- 7 calculating the range of the film build thickness measurements of each subgroup, each range comprising the difference between the greatest thickness 8 9 measurement and the least thickness measurement of the subgroup;
- 10 selecting data from at least two of said subgroups having the 11 smallest of the calculated ranges; and
- 12 monitoring variations of the film build thickness of subsequent 13 workpieces coated in the film build by processing the data from the selected subgroups.
 - 1 2. (Canceled)
- 1 3. (Canceled)

- 1 4. (Canceled)
- 1 5. (Canceled)
- 1 6. (Canceled)
- 1 7. (Canceled)
- 1 8. (Canceled)
- 1 9. (Canceled)
- 1 10. (Canceled)
- 1 11. (Canceled)
- 1 12. (Canceled)

1	13.	(Canceled)

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- 1 14. (Previously Added) A computer-implemented method for 2 monitoring variations in the film build thickness of workpieces on which a film 3 build process has been performed, comprising the steps of:
- 4 measuring the film build thickness of a group of workpieces. 5 the group comprising at least two subgroups of workpieces, each subgroup 6 including at least two workpieces;
- 7 calculating the range of the film build thickness 8 measurements of each subgroup, each range comprising the difference between 9 the greatest thickness measurement and the least thickness measurement of the 10 subgroup;
 - selecting data from at least two of said subgroups having the smallest of the calculated ranges;
- 13 monitoring variations of the film build thickness of 14 subsequent workpieces coated in the film build by processing the data from the 15 selected subgroups; and
- 16 including the step of calculating Cpk based on the ranges of 17 the selected subgroups.
- 15. (Previously Added) A computer-implemented method for monitoring 2 variations in the film build thickness of workpieces, based on process capability

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3 analysis on which a film build process has been performed, comprising the steps 4 of: 5 measuring the film build thickness of a group of workpieces, 6 the group comprising at least two subgroups of workpieces, each subgroup 7 including at least two workpieces; 8 calculating the range of the film build thickness 9 measurements of each subgroup, each range comprising the difference between 10 the greatest thickness measurement and the least thickness measurement of the 11 subgroup; 12 selecting data from at least two of said subgroups having the 13 smallest of the calculated ranges; and 14 monitoring variations of the film build thickness 15 subsequent workpieces coated in the film build by processing the data from the 16 selected subgroups; and 17 including the steps of calculating the difference in C_{pk} for the 18 new process control limits and the existing process control limits, and then 19 calculating the change in film build material usage from said difference in Cpk. 1 16. (Previously Added and Currently Amended) A method for 2 monitoring the film build thickness of workpieces on which a first film build 3 process has been performed, comprising the steps of: 4 calculating a first C_{pk} of [the] workpieces on which [the] a first

film build process has been performed;

- 6 acquiring data relating to parameters of a second film build
- 7 process in which at least one of the parameters of the first film build process has
- 8 been changed;
- 9 calculating a second C_{pk} of the second film build process
- 10 from said acquired data; and
- 11 calculating the difference between the first C_{pk} and the
- 12 second C_{pk} to ascertain the relationship between said difference and the
- 13 changed parameter.
 - 1 17. (Previously Added) A method as defined in claim 16, including the
- 2 step of acquiring cost data relating to said first film build process and cost data
- 3 relating to said second film build process; and
- 4 generating a cost difference utilizing the first film build
- 5 process and the second film build process utilizing the first C_{pk} and the second
- 6 C_{pk}.
- 1 18. (Previously Added) A method as defined in claim 16, including the
- 2 step of calculating the C_{pk} of at least one of said film build processes from range
- 3 values of the film build thickness of the corresponding film build process.
- 1 19. (Previously Added and Currently Amended) A method as defined
- 2 in claim 16, including the step of acquiring selected coating millages relating to

- 3 said first film build process and selected coated millages relating to said second
- 4 film build process; and
- 5 generating a cost difference between the first film build
- 6 process and the second film build process utilizing the first Cpk and the second
- 7 Cpk to ascertain the mean shift in Film Build millages.
- 1 20. (Previously Added and Currently Amended) A method as defined
- 2 in claim 16, including the step of acquiring target range values relating to said
- 3 first film build process and target range values relating to said second film build
- 4 process; and
- 5 generating a cost difference between the first film build
- 6 process and the second film $\underline{\text{build}}$ process utilizing the first C_{pk} and the second
- 7 C_{pk.}
- 1 21. (Previously Added) A method as defined in claim 16, including the
- 2 step of acquiring data of the cost difference between the first and the second film
- 3 build processes in which both of said film build processes have the same film
- 4 thickness averages but with a different Cpk for the first and the second film build
- 5 processes.
- 1 22. (Previously Added and Currently Amended) A method as defined in
- 2 claim 16, including the step of acquiring data of the first film build process
- 3 including Coating Minimum Specifications, Actual Film Thickness Average,

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- 4 Actual Film Thickness Range, the C_{pk} of the first film process, and a subgroup size.
- 1 23. (Previously Added and Currently Amended) A method as defined in 2 claim 16, including the step of acquiring data regarding film build usage, of the 3 first film build process and film build usage data of the second film build process, 4 and in which the changed parameter is the film build material usage of said first 5 film process, and then calculating the difference in film build material usage from 6 the difference in the first C_{pk} value and the second C_{pk} value.
 - 24. (Previously Added and Currently Amended) A method as defined in claim 16, in which the changed parameter is the process control limits of the second $\underline{\text{film}}$ build process and then calculating the change in film build material usage from the difference in the first C_{pk} value and the second C_{pk} value.
 - 25. (Previously Added) A method as defined in claim 22, including the step of selecting target range values for the first film process and the second film process, and then calculating the differences in the film build material usage from the difference between the first C_{pk} value and the second value C_{pk} .
- 1 26. (Previously Added and Currently Amended) A method as defined in 2 claim 16, including the step of acquiring data of the film build material usage of 3 the first film <u>build</u> process, then selecting coating millages for at least one of said

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- 4 film build processes, and then calculating the change in film build material usage
- from the difference between said first C_{pk} value and the second C_{pk} value.
- 1 27. (Previously Added and Currently Amended) A method as defined in claim 16, including the step of acquiring data regarding the material usage values of the first film build process and the film usage of the second <u>film build</u> process based on using the same film thickness with different variability for the first and the second film build processes and then calculating the change in film build usage from the difference between said first C_{pk} value and the second C_{pk} value.
 - 28. (Previously Added and Currently Amended) A method as defined in claim 16, including the step of calculating the optimal variability of the first film build process by adjusting the film millage average thereof, using said first C_{pk}, and in which optimal variability is defined as the lowest standard deviation in a run of seven or more units in the film build process.
- 1 29. (Previously Added and Currently Amended) A method as defined in 2 claim 16, including the step of calculating the optimal variability of said first film 3 build process by adjusting the film millage costs thereof utilizing said first C_{pk} and 4 in which optimal variability is defined as the lowest standard deviation in a run of 5 seven or more units in the build process.

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1	30. (Previously Added and Currently Amended) A method as defined in
2	claim 16, including the step of adjusting the variability of the first film build
3	process to optimize the film millage average.

- means for acquiring data relating to parameters of a second film build process in which at least one of the parameters thereof has been changed;
 - computer-implemented means for calculating a second C_{pk} of the second film build process; and
- 11 computer-implemented means for calculating the difference 12 between the first C_{pk} and the second C_{pk} to develop a relationship between said 13 difference and the changed parameter.